

NOTE

Larvae of soldier beetle, *Chauliognathus pennsylvanicus* (De Geer)
(Coleoptera: Cantharidae): Predators of engorged
tick larvae and nymphs in the laboratory

Garrett and Sonenshine (1979, ed. R. W. Kirk. The Great Dismal Swamp. Virginia Press, Charlottesville) found that carabid beetles ate unfed American dog tick, *Dermacentor variabilis* (Say), adults in the field and laboratory. Little else, however, is known about arthropod predators of *D. variabilis*. Soldier beetle larvae were frequently found in and under Sherman live traps baited with cracked corn to capture meadow voles (Carroll and Nichols. 1986. J. Entomol. Sci. 2: 102-113). Engorged *D. variabilis* were also found beneath the traps and surrounding surface litter (ibid.). The possibility that the cantharid larvae, which are known to be predacious (Borror et al. 1981. An Introduction to the Study of Insects, 5th ed. Saunders College, Phila.), might feed on engorged ticks seemed worth investigating.

Twenty cantharid larvae collected from within or beneath the Sherman traps were placed in petri dishes (1.5 cm high, 5.5 cm diameter), each with a wad of moistened tissue paper. Each of 13 beetle larvae was proffered an engorged *D. variabilis* nymph from a laboratory colony. I observed each pair of ticks and cantharids for 15 min immediately after they were placed together, and checked them again after 24 and 48 h and 8 days for signs that the ticks had been eaten or killed. The same procedure was followed using engorged tick larvae and 14 cantharid larvae (7 used with the nymphs and 7 others). The cantharids were main-

tained on a diet of cracked corn and Caribbean fruit fly, *Anastrepha suspensa* (Loew), puparia obtained from a laboratory colony.

Ten of the 13 cantharids ate the nymphs within 24 h, and the remaining 3 did so within 8 days. All the tick larvae were eaten within 48 h of being proffered to the cantharids. Five of the tick larvae were attacked within 15 min of being placed in the petri dishes. The cantharids did not appear to recognize the ticks as food items until contact occurred, at which point the cantharids seized the ticks and started chewing. Three of the cantharids developed into adults, one of which was identified by R. D. Gordon (Systematic Entomology Laboratory, BBII, Agricultural Research Service, USDA) as *Chauliognathus pennsylvanicus* (De Geer).

I did not observe *C. pennsylvanicus* larvae feeding on ticks in the field but did see them feeding on the cracked corn and once on a lepidopterous larva 0.3 m above the ground on a stem of goldenrod, *Solidago* sp. The apparent commonness of adult *C. pennsylvanicus* and the presence of their larvae in microhabitats where engorged *D. variabilis* occur suggest that this soldier beetle might be a natural enemy of the American dog tick.

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